Darley P-100 Pump - Main Uses

- Firefighting
- De-watering & Salvage
- Liquid Pumping

P-100 Pump - Features

- Portability
- Diesel Fuel - No Petrol
- Simple Operation
- Corrosion Resistant
- No electrical parts
- Yanmar industrial engine
- Proven Darley pump

P-100 Pump - Components

- Diesel Engine
- Centrifugal Pump
- Exhaust driven Primer
- Discharge Valve
- Recoil Starter
- Fuel Tank
- Discharge Pressure Gauge

P-100 Pump, Features

- Roll Cage Frame
- Stowable Handles
- Weight 162 lbs
- 2hrs 45 mins fuel supply
- 100 USGPM @ 85 psi @ 20 ft lift
- 275 USGPM @ 47 psi @ 5 ft lift

P-100 Pump - Features

- Decompression lever on top
- Standard Industrial Diesel Engine
- Fuel filter inside Fuel Tank
- Mesh type Oil Filter on crankcase side
- Oil Filler plug/dipstick on both sides
- Dry Paper type air cleaner
- Darley adjustable shaft seal.

P-100 Pump - Features

- Suction Inlet Strainer
- Drain Valve at bottom of pump
- Exhaust Ejector Primer

P-100 Pump - Set up for working

- Suction hose to inlet of pump, into water
- Delivery hose from discharge valve
- If Needed - special hose from exhaust
  - (If working inside compartment)

P-100 Pump - Preparation

- **Check Oil Level (Either side)**
  - **Remove & wipe dipstick**
  - **insert only until threads touch case**
  - **add oil if needed.**
- **Check Fuel Level (Sight tube on tank)**
- **Check suction couplings tight**
  - **Suction strainer into water (Support hose)**
  - **Connect Discharge Hose**
  - **Maximum Suction height - 22ft !**

P-100 Pump - Starting

- Make sure drain valve is closed !
- Open Fuel Valve (lever downwards)
- Set Black Knob of Throttle to “Start”
- Set decompression lever DOWN
- TWO HANDS on starter rope handle
- ONE FOOT on bar beneath engine.
- Good - Hard Pull using both arms !

Warning - Reverse Running

- If not started properly - engine can run backwards.
- Smoke comes out Air cleaner intake.
- Throttle to “Stop” immediately.
  - Turn off Fuel
  - Push Decompressor lever DOWN

P-100 Pump - Engine Running

- When engine starts - Throttle to smooth idling speed.
- Do not run dry for more than 1-2 mins.

P-100 Pump - Priming

- Engine at “Full Speed” above 10ft lift
- Open White Air Valve (In-line with hose)
- Primer lever to Horizontal Position
- Water from primer pipe -close White air valve.
- Primer lever back down to vertical.
- Open discharge valve
- Adjust Throttle to desired pressue
- If water does not flow - Prime again.

P-100 Pump - Adjust gland

- If water sprays from shaft gland at rear of pump - adjust the sealing gland.
- Use **9/16 AF** spanner to GENTLY screw hex head of gland plunger inwards.
- 15 to 20 drips/min of water should flow
- Do NOT overtighten or stop flow
- Extra pellets of packing can be added.

P-100 Pump - Working

- Adjust throttle to get desired pressure.
- Do not overload engine - if Black Smoke from exhaust, reduce throttle.
- Watch Pressure Gauge.
- Listen to Motor
- Watch Fuel level.

P-100 Pump - Refuelling

- Refuel when engine is cold. (If possible)
- Refuelling hot engine - BE CAREFUL !
  - Use Funnell.
  - Do NOT spill fuel
  - Stand - by with Fire Extinguisher

P-100 Pump - Stop Engine

- Reduce Engine speed to “Slow Idle”
- Idle for 2 mins
- Throttle control to “Stop”
- If engine does not stop, turn off fuel and wait.

P-100 Pump - After Use

- Drain Pump using small drain valve at lower pump casing.
- CLOSE DRAIN VALVE ! (Pump will not prime if valve is left open)
- Flush with Fresh Water
- Refuel and Check Oil
- Wipe Down. Inspect. Re-stow & Lash.

P-100 Pump Do’s & Dont’s

- Do not run pump dry.
- Do not run at pressure with no flow.
- If Pump will not respond to Throttle:-
  - Shut Fuel Tank Valve
  - push decompressor lever DOWN
- Do not spill fuel.
- Do not start engine in flammable vapour

P-100 Pump - Maintenance

- To Drain Fuel from Tank:-
  - Remove drain plug from bottom of tank
  - Drain Fuel - replace plug & tighten
- Fuel Filter removal & inspection
  - Drain fuel as above
  - Remove two nuts beside fuel tank valve.
  - Remove Fuel Cap, Strainer, then filter.

P-100 Pump - Maintenance

- Clean Engine Oil Filter at 6 months or 500 hours.
  - Remove oil drain plug (either side)
  - Drain Oil
  - Loosen lock bolt on oil filter cover
  - Remove oil filter, inspect, clean, replace.
  - Refill with oil - SAE 10W/40
  - **Change Oil @ first 20hrs, then each 3 mths or 100 hrs**

P-100 Pump - Maintenance

- Inspect Air Cleaner element @ 3months or 100 hours.
- Remove wing-nut, and cover
- Warning - Do Not Use Flammable Solvent to Clean Air Cleaner Body
- Wipe clean with dry cloth.
- Replace element if dirty.

P-100 Pump, Flush Sea Water

- Do not leave Salt Water inside Pump
- Open Drain Valve, Drain.
- CLOSE Drain Valve
- Pump Fresh water at 50 psi for 5 mins
- Drain, CLOSE valve
- Store pump.

P-100 Pump- Visual Checks

- Regularly check all parts of pump:-
  - **Frame**
  - **Skids**
  - **Carrying Handles**
  - **Engine Mounts**
  - **Suction Inlet, Discharge Coupling**
  - **Hoses & Clamps on pump**
  - **Suction & Exhaust hoses for damage**
  - **Recoil Starter & Rope**

P-100 Pump- Visual Checks

- Further Visual Checks:-
  - **Throttle movement**
  - **Priming Line Valve**
  - **Drain Valve**
  - **Pressure Gauge**
  - **Fuel Level Tube**
  - **Priming Unit - Free to move open & close**
  - **Air Filter Housing**
  - **Engine - Oil Leaks ? Cracks or damage to castings ?**

P-100 Pump- Weekly Turn-Over

- Turn Fuel Valve Off
- Throttle at STOP position
- Do NOT try to Start engine
- Pull Start rope slowly - feel compression
- Decompression lever down & HOLD
- Slowly pull starter handle full length.
- Lift decompression lever.

P-100 Pump - External Lubrication

- Put Silicon Grease on:-
  - Throttle pivot points.
  - Governor pivots (Move control to spread)
  - Decompression Lever
  - Pump Drain Valve Threads (Open/Close)
  - Suction Inlet Threads

P-100 Pump - Repacking Gland

- When Plunger of Gland Stuffing Box is near bottom of thread:-
  - Remove Packing Gland Nut with Plunger
  - Screw Plunger fully out from cylinder.
  - Insert One Fresh Pellet of G926 Packing
  - Replace nut and screw plunger down
  - Adjust GENTLY with **9/16” AF** spanner
  - **DO NOT USE POWER TOOL OR RATCHET**

P-100 Pump - After Repacking Gland

- Prime Pump and flow water at 50 psi
- Adjust Plunger GENTLY to reduce leak
- About 20 drips of water per minute
- Maximum Pressure for 10 mins -
- Adjust again to 20 drips per minute
- Do NOT tighten dry. Gland MUST leak.
- Several adjustments may be necessary

P-100 Pump - Summary

- Clean Fuel
- Regular Maintenance
- Drain Salt water, wash withFresh water.
- Lash down on board ship.
- Regular running.
- Weekly turn-over & Visual Checks.